

## User's Guide



### *MVC 121* Mic/Line Mixer and Volume Controller

# Precautions

## Safety Instructions • English



This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

### Caution

**Read Instructions** • Read and understand all safety and operating instructions before using the equipment.

**Retain Instructions** • The safety instructions should be kept for future reference.

**Follow Warnings** • Follow all warnings and instructions marked on the equipment or in the user information.

**Avoid Attachments** • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

## Consignes de Sécurité • Français



Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).



Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

### Attention

**Lire les instructions** • Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

**Conserver les instructions** • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

**Respecter les avertissements** • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

**Eviter les pièces de fixation** • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

## Sicherheitsanleitungen • Deutsch



Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.



Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

### Achtung

**Lesen der Anleitungen** • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits- und Bedienungsanleitungen genau durchlesen und verstehen.

**Aufbewahren der Anleitungen** • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

**Befolgen der Warnhinweise** • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

**Keine Zusatzgeräte** • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

## Instrucciones de seguridad • Español



Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.



Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

### Precaucion

**Leer las instrucciones** • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

**Conservar las instrucciones** • Conservar las instrucciones de seguridad para futura consulta.

**Obedecer las advertencias** • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

**Evitar el uso de accesorios** • No usar herramientas o accesorios que no sean específicamente recomendados por el fabricante, ya que podrían implicar riesgos.

## Warning

**Power sources** • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

**Power disconnection** • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

**Power cord protection** • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

**Servicing** • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

**Slots and openings** • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

**Lithium battery** • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

## Avertissement

**Alimentations** • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité: n'essayez pas de le contourner ni de le désactiver.

**Déconnexion de l'alimentation** • Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

**Protection du cordon d'alimentation** • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

**Réparation-maintenance** • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

**Fentes et orifices** • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

**Lithium Batterie** • Il y a danger d'explosion s'il y a un remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

## Vorsicht

**Stromquellen** • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

**Stromunterbrechung** • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stromversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

**Schutz des Netzkabels** • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegen gestellt werden können.

**Wartung** • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

**Schlitze und Öffnungen** • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

**Litium-Batterie** • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

## Advertencia

**Alimentación eléctrica** • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearla ni eliminarla.

**Desconexión de alimentación eléctrica** • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

**Protección del cable de alimentación** • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

**Reparaciones/mantenimiento** • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

**Ranuras y aberturas** • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

**Batería de litio** • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

---

## 安全须知 • 中文



这个符号提示用户该设备用户手册中有重要的操作和维护说明。



这个符号警告用户该设备机壳内有露的危险电压，有触电危险。

### 注意

**阅读说明书** • 用户使用该设备前必须阅读并理解所有安全和使用说明。

**保存说明书** • 用户应保存安全说明书以备将来使用。

**遵守警告** • 用户应遵守产品和用户指南上的所有安全和操作说明。

**避免追加** • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

### 警告

**电源** • 该设备只能使用产品上标明的电源。设备必须使用有地线的供电系统供电。第三条线（地线）是安全设施，不能不用或跳过。

**拔掉电源** • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

**电源线保护** • 妥善布线，避免被踩踏，或重物挤压。

**维护** • 所有维修必须由认证的维修人员进行。设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

**通风孔** • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。不要用任何东西挡住通风孔。

**锂电池** • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

## FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**NOTE** *This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.*



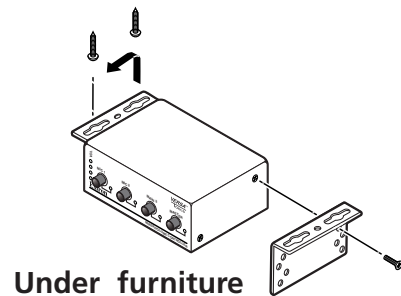
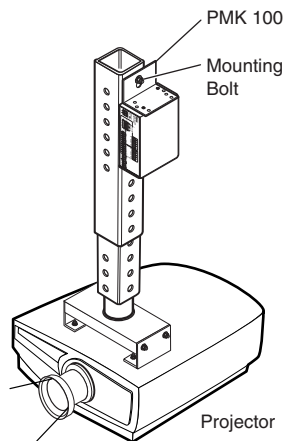
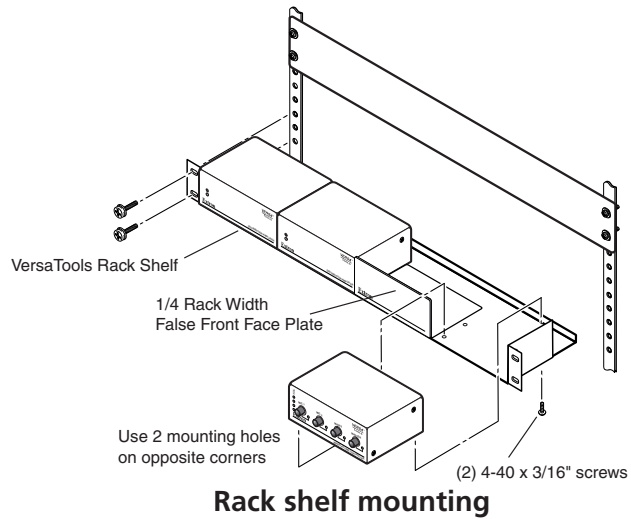
## Quick Start Guide — MVC 121

### Step 1

Disconnect all power prior to installing the MVC 121.

### Step 2

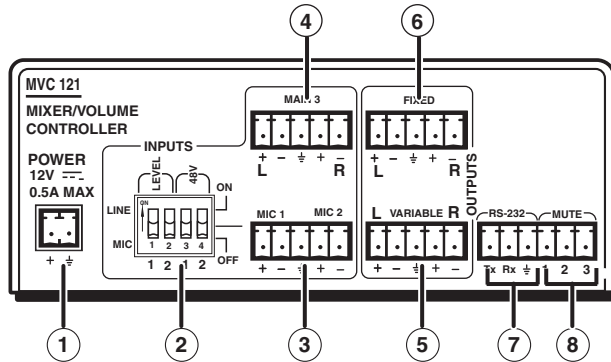
**Mount the MVC** (if applicable) or affix the rubber feet to the bottom of the MVC for tabletop use. The MVC can be mounted in a **rack shelf**, under **furniture**, or to a **projector mount**. See chapter 2, "Installation and Operation", for details.



## Quick Start Guide — MVC 121, cont'd

### Step 3

Attach the cables and set the DIP switches.



- ① **Power connector** — Connect the 12 VDC external power supply.

**CAUTION** When connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the MVC 121.

- ② **Mic input DIP switch** — Mic 1 and Mic 2 inputs are controlled via the DIP switch.

- Set the mic input **Level** according to the mic type:
  - Wireless mic: Set the mic's DIP switch to **Line** (On).
  - Wired mic: Set the mic's DIP switch to **Mic** (Off).
- Set the **48V** phantom power according to the mic type:
  - Condenser mic: Set the mic's DIP switch to On.
  - Dynamic mic: Set the mic's DIP switch to Off.

**CAUTION** Never set a dynamic microphone to **48V**, doing so may damage the microphone. For condenser mics, verify that the mic will safely operate at 48VDC.

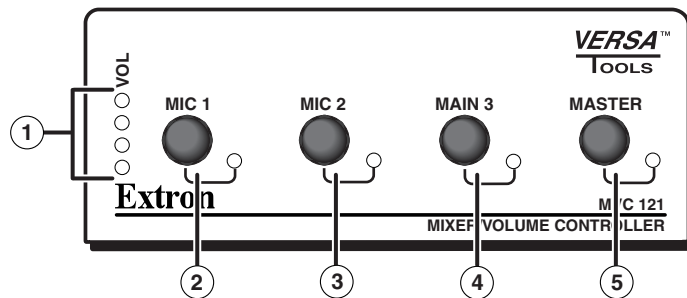
**NOTE** When the DIP switch is set to line level, **48V** phantom power is disabled regardless of its DIP switch position.

- ③ **Mic 1 and Mic 2 input connector** — Up to two mono microphones, balanced and/or unbalanced, may be connected.
- ④ **Main 3 line level input connector** — Connect a line level audio source.

- ⑤ **Variable output connector** — The balanced/unbalanced stereo output is controlled by the Master volume control knob on the front panel.
- ⑥ **Fixed output connector** — The balanced/unbalanced stereo output is set at a fixed level for input to a recording device. Signal level can be adjusted at the recording device.
- ⑦ **RS-232 connector** — Connect an RS-232 device (control system or PC) for two-way RS-232 communication.
- ⑧ **Mute connector** — Connect a contact closure device to mute the inputs. See “Contact Closure Mute” in chapter 3.

#### **Step 4**

Adjust the front panel volume controls. See chapter 2, “Installation and Operation”.



- ① **Volume level LEDs** — Mic 1, Mic 2, Main 3, and Master gain/volume level indicators.
- ② **Mic 1 input gain control and on/off indication LED**
- ③ **Mic 2 input gain control and on/off indication LED**
- ④ **Main 3 line level input gain control and on/off indication LED**
- ⑤ **Master output volume control and on/off indication LED to control variable output**

## Quick Start Guide — MVC 121, cont'd



## Table of Contents

---

<b>Chapter 1 • Introduction</b> .....	1-1
<b>About the MVC 121</b> .....	1-2
<b>Features</b> .....	1-2
<b>Chapter 2 • Installation and Operation</b> .....	2-1
<b>Mounting the MVC 121</b> .....	2-2
Tabletop use .....	2-2
UL rack mounting guidelines .....	2-2
Rack mounting .....	2-3
Furniture or projector mounting .....	2-4
Furniture mounting .....	2-4
Projector mounting .....	2-5
<b>Application Diagram</b> .....	2-6
<b>Rear Panel Features and Cabling</b> .....	2-7
<b>Front Panel Features</b> .....	2-12
Turning channels on/off .....	2-13
On/off status LEDs .....	2-14
Mute/unmute channel .....	2-14
Front panel security lockout (executive mode) .....	2-14
<b>Chapter 3 • Remote Control</b> .....	3-1
<b>RS-232 Programmer's Guide</b> .....	3-2
Host-to-MVC communications .....	3-2
MVC-initiated messages .....	3-2
Error responses .....	3-2
Using the command/response table .....	3-3
Command/response table .....	3-5
<b>Windows-based Program Control</b> .....	3-9
Installing the software .....	3-9
Using the software .....	3-10
Setting output volume range limits .....	3-10
Using the help system .....	3-12
Updating the firmware .....	3-12
<b>Contact Closure Mute</b> .....	3-13
<b>Appendix A • Specifications, Part Numbers, and Accessories</b> .....	A-1
<b>Specifications</b> .....	A-2
<b>Included Parts</b> .....	A-5
<b>Optional Accessories</b> .....	A-5

## Table of Contents, cont'd

---

*All trademarks mentioned in this manual are the properties of their respective owners.*

68-793-01 **Rev. C**  
02 09



## MVC 121 Mic/Line Mixer

# 1

# Chapter One

## Introduction

About the MVC 121

Features

## Introduction

---

### About the MVC 121

The Extron MVC 121 is an audio mixer and volume controller in the Extron VersaTools™ product line that mixes up to two mic inputs (mono, balanced/unbalanced) with one main line level input (stereo, balanced/unbalanced). Each mic input and the main line level input have their own gain control knobs, and the mixed output also features a volume control knob.

Volume adjustment interval varies with the speed of knob rotation, i.e., turning the knob slowly increments the volume in smaller steps (0.5 dB), and turning the knob quickly increments the volume in larger steps (2.5 dB).

Two sets of outputs include a fixed output that is independent from volume control, and a variable output that is volume adjustable. All inputs and outputs are via 3.5 mm captive screw connectors, and the volume settings are indicated by four LEDs.

The MVC offers RS-232 control of input gain/attenuation, and control of output volume. RS-232 control also includes the capability to turn the inputs and output on/off. The latest firmware can be uploaded using RS-232 and the Extron control program for Windows®.

### Features

**Furniture, rack, and projector mountability** — The Extron MVC 121 can be mounted under a desk or other furniture, or mounted on a projector lift with optional brackets. Alternatively, it can be rack mounted on an optional rack shelf.

**Microphone inputs** — Built-in switchable microphone amplifier with 48 V phantom power and separate level setting for each microphone.

**Front panel security lockout (executive mode)** — The volume settings for the inputs and the output can be protected from unauthorized changes by enabling the executive mode, although the volume settings can still be displayed by the LEDs when the volume control knobs are turned.

**Stand-alone volume controller** — The MVC 121 can operate as a volume controller for the main line level input with both mic inputs turned off.

**RS-232 control** — Allows remote control of the MVC using the Extron Simple Instruction Set™ (SIS™), the Extron control software for Windows, or other remote control system.



## **MVC 121 Mic/Line Mixer**

# **Chapter Two**

## **Installation and Operation**

Mounting the MVC 121

Application Diagram

Rear Panel Features and Cabling

Front Panel Features

## Installation and Operation

---

### Mounting the MVC 121

The one rack unit high, quarter rack wide MVC can be set on a table, mounted on a rack shelf, mounted under a desk or tabletop, or mounted on a projector bracket.

#### Tabletop use

Each MVC comes with rubber feet (not installed). For tabletop use, attach a self-adhesive rubber foot to each corner of the bottom of the unit.

#### UL rack mounting guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the MVC 121 in a rack.

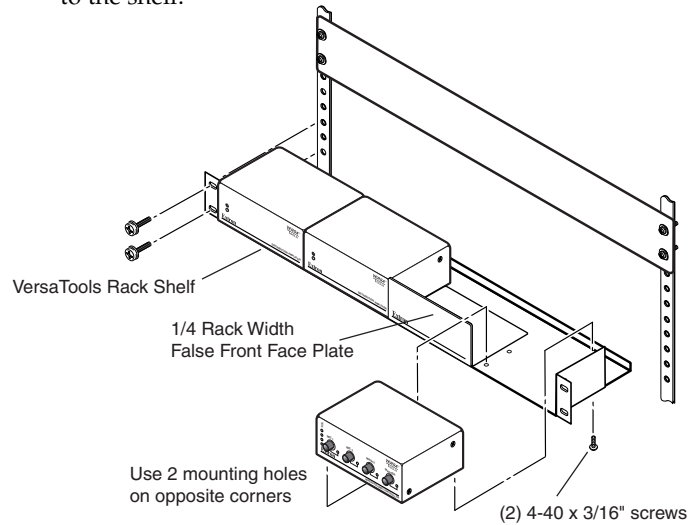
1. **Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the MVC in an environment compatible with the maximum ambient temperature ( $T_{ma} = +122\text{ }^{\circ}\text{F}$ ,  $+50\text{ }^{\circ}\text{C}$ ) specified by Extron.
2. **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

---

## Rack mounting

For optional rack mounting, do not install the rubber feet. Mount the MVC on a VersaTools® 19" 1U rack shelf (Extron RSF 123, part #60-190-20; Extron RSB 123, part #60-604-20), or a standard Universal 1U or Basic rack shelf (Extron RSU 129, part #60-190-01; Extron RSB 129 or #60-604-01). On the standard rack shelf, the MVC mounts in one of four locations to the rear of the rack or in one of four locations to the front of the rack.

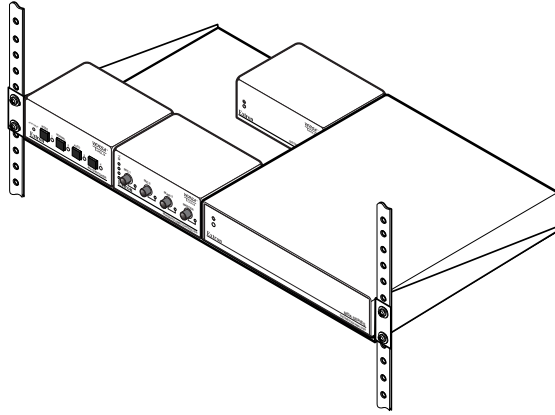
1. If rubber feet were previously installed on the bottom of the MVC, remove them.
2. Mount the MVC on the rack shelf, using two 4-40 x 3/16" screws in opposite (diagonal) corners to secure the MVC to the shelf.



### ***Mounting the MVC on a VersaTools rack shelf***

## Installation and Operation, cont'd

---



### ***Mounting the MVC on a standard 1U rack shelf***

3. Install blank panel(s) or other unit(s) on the rack shelf.

## **Furniture or projector mounting**

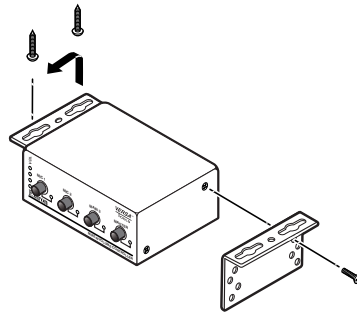
Furniture mount or projector mount the MVC using the optional mounting kit (Extron MBU 123, part #70-212-01, furniture; or Extron PMK 100, part #70-217-01, projector) as follows:

1. Attach the mounting brackets to the MVC with the machine screws provided.
2. If feet were previously installed on the bottom of the MVC, remove them.

### **Furniture mounting**

- 3a. Hold the MVC with the attached brackets against the underside of the table or other furniture. Mark the location of the screw holes of the bracket on the mounting surface.
- 4a. Drill 3/32" (2 mm) diameter pilot holes, 1/4" (6.3 mm) deep in the mounting surface at the marked screw locations.
- 5a. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until just less than 1/4" of the screw head protrudes.
- 6a. Align the mounting screws with the slots in the brackets and place the MVC against the surface, with the screws through the bracket slots. See the following illustration.



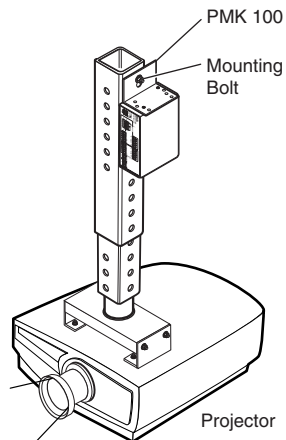


### ***Mounting the MVC to furniture***

- 7a. Slide the MVC slightly forward or back, then tighten all four screws to secure the MVC in place.

### **Projector mounting**

- 3b. Secure the MVC to a projector mount or other surface by inserting the mounting bolt through the bracket's slotted hole, as shown below.

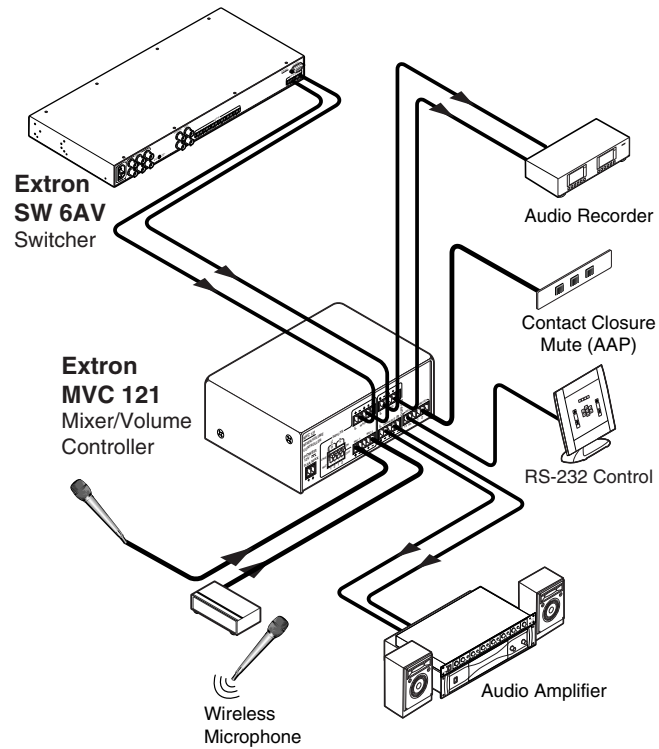


### ***Mounting the MVC to a projector mount***

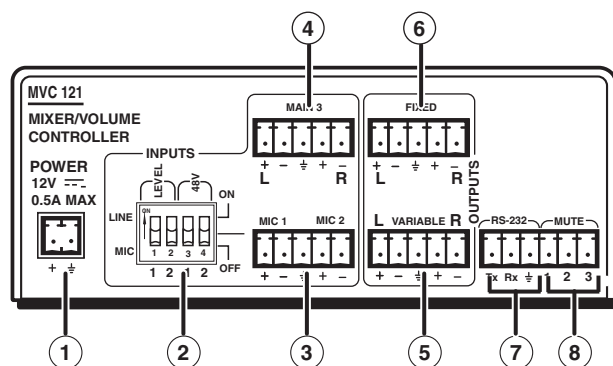
## Installation and Operation, cont'd

---

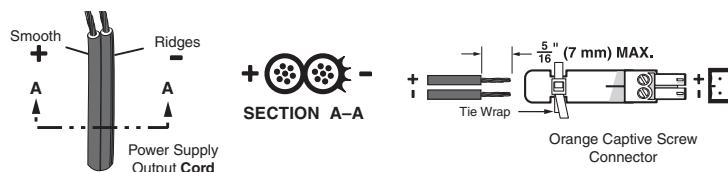
### Application Diagram



## Rear Panel Features and Cabling



- ① **Power connector** — Connect the included 12 VDC external power supply into the 2-pole 3.5 mm captive screw connector. Be careful to observe the correct polarity.



### CAUTION

When connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the MVC 121. Identify the power cord negative (ground) lead by the ridges on the side of the cord or a black heat shrink wrapping around it.

### WARNING

The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

To verify the polarity before connection, check the no load power supply output with a voltmeter.

### CAUTION

The length of the exposed (stripped) copper wires is important. **The ideal length is 5/16" (7 mm).** Longer bare wires can short together. Shorter wires are not as secure in the direct insertion connectors and could be pulled out.

## Installation and Operation, cont'd

---

Use the supplied tie-wrap to strap the power cord to the extended tail of the connector.

**NOTE** Your MVC 121 may have shipped with a blue captive screw connector. This blue connector can be plugged into either a blue or an orange power receptacle.

*The ideal length of exposed (stripped) copper wire for the blue connector is 3/16" (5 mm).*

*The blue connector does not have the extended tail or the included tie-wrap.*

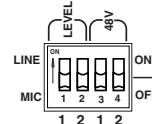
**NOTE** Do not tin the power supply leads before installing in the direct insertion connector. Tinned wires are not as secure in the connectors and could be pulled out.

**NOTE** After making any adjustments to the MVC 121, either via the front panel controls, SIS commands, or the Extron Audio Products Control Program, wait at least 10 seconds after making those changes **before** disconnecting power to the MVC 121. Failure to observe the 10-second timeout may result in those adjustments not being saved.

② **Mic input DIP switch**— Mic 1 and Mic 2 inputs are controlled via a DIP switch.

1. Set the mic input **Level** according to the microphone type:

- Wireless mic: Set the mic's DIP switch to the **Line** position (On).
- Wired mic: Set the mic's DIP switch to the **Mic** position (Off).



2. Set the **48V** phantom power position according to microphone type:

- Condenser mic: Set the mic's DIP switch to the On position.
- Dynamic mic: Set the mic's DIP switch to the Off position.

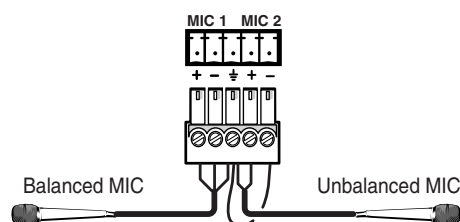
**NOTE** Condenser microphones require power. Dynamic microphones **do not** require power.

**NOTE** When a mic's input level DIP switch is set to "line" level, that input's **48V** phantom power is disabled regardless of the "48V" phantom power DIP switch setting of that input.

**CAUTION** *Never set an unbalanced dynamic microphone to 48V, doing so may damage the microphone. For condenser mics, verify that the mic will safely operate at 48 VDC.*

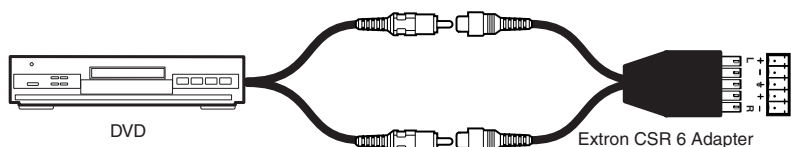
- ③ **Mic 1 and Mic 2 input connector** — Up to two mono microphones, balanced and/or unbalanced, may be connected to this 5-pole 3.5 mm captive screw connector. See the following diagram.

**NOTE** *Mic inputs will be evenly mixed into both left and right outputs.*



**Example wiring of balanced and unbalanced mics**

- ④ **Main 3 line level input connector** — Connect a line level audio source to this 5-pole 3.5 mm captive screw connector, such as a CD player, DVD player, tape deck, etc. Balanced or unbalanced stereo connections can be wired to this connector.

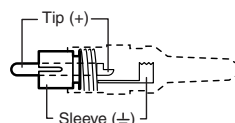


**Example of DVD line level input to Main 3 input**

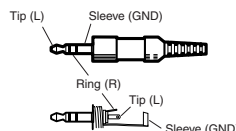
**NOTE** *Input devices cabled with two RCA male outputs may be connected to the 5-pole 3.5 mm captive screw connector using the Extron CSR 6 adapter, part #26-575-01.*

To wire the captive screw connectors to RCA or 3.5 mm mini phone plugs, see the illustrations below.

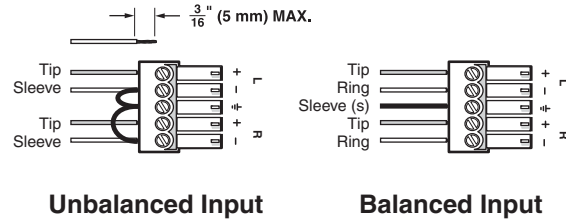
**RCA Connector**



**3.5 mm mini stereo plug**

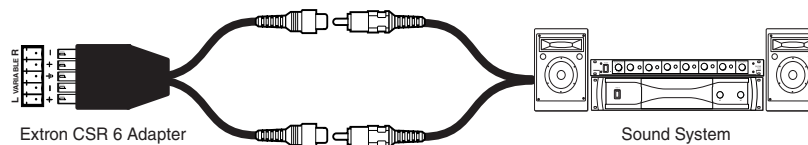


## Installation and Operation, cont'd

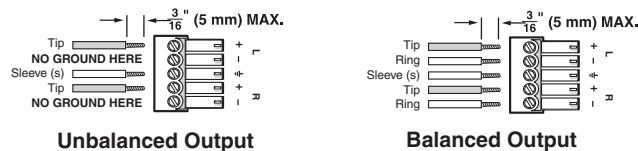


- ⑤ **Variable output connector** — The balanced/unbalanced stereo output to an amplifier from the 5-pole 3.5 mm captive screw connector (see the diagrams below) is controlled by the Master volume control knob on the front panel (see "Front Panel Features" in this chapter). Adjust the speaker volume by using the following sequence:
1. Adjust the amplifier's volume down to its minimum setting.
  2. Adjust the Master volume control of the MVC to its default level (volume = 80 when connecting to an unbalanced consumer amp, or volume = 86 when connecting to a balanced professional amp).
  3. Adjust the amplifier's volume to the desired level.
  4. Make subsequent volume level adjustments by using the MVC's Master volume control.

**NOTE** Output devices cabled with two RCA male inputs may be connected to the 5-pole 3.5 mm captive screw connector using the Extron CSR 6 adapter, part #26-575-01.

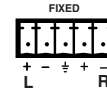


### Example using the Variable output connected to an amplified sound system



**CAUTION** Connect the sleeve to ground (Gnd). Connecting the sleeve to a negative (-) terminal will damage the audio output circuits.

- ⑥ **Fixed output connector** — The balanced/unbalanced stereo output from this 5-pole 3.5 mm captive screw connector is output at a fixed volume level for input to a recording device. Volume level can be adjusted at the recording device.

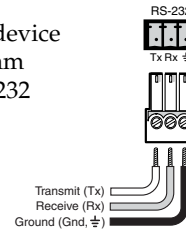


**NOTE** *The Master volume control knob on the front panel operates independently from the fixed output.*

The Fixed output connector is wired the same as the Variable output connector. See ⑤, Variable output connector, for an example application diagram with cabling instructions and a caution.

**NOTE** *Both the Fixed and Variable output connectors will output audio simultaneously.*

- ⑦ **RS-232 connector** — Connect an RS-232 device (control system or PC) to the 3-pole 3.5 mm captive screw connector for two-way RS-232 communication.



Software for RS-232 control is included with the MVC. See chapter 3, “Remote Control”, for information on how to install and use the control software and SIS commands.

- ⑧ **Mute connector** — Connect a contact closure device to the 6-pole 3.5 mm captive screw connector to mute the inputs, as follows:



1. Short and hold pin 1 to ground to mute Mic 1 input.
2. Short and hold pin 2 to ground to mute Mic 2 input.
3. Short and hold pin 3 to ground to mute Main 3 line level input.

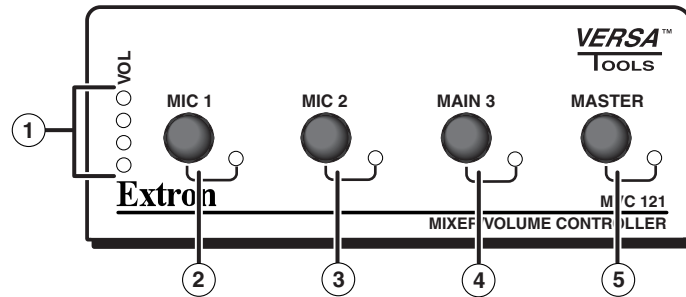
See chapter 3, the “Contact Closure Mute” section.

**NOTE** *RS-232 and Mute share the same ground.*

The associated input remains muted during the time period the contact closure pin is shorted to ground and all the front panel and RS-232 controls for that input are disabled. As soon as the short is removed, the contact closure mute is disabled and the other controls are enabled.

## Installation and Operation, cont'd

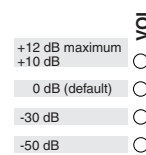
### Front Panel Features



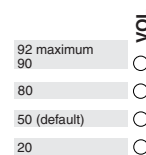
**NOTE** All front panel control knobs are speed sensitive. Turn the knob quickly to make coarse gain/volume adjustments or slowly to make fine adjustments.

- ① **Gain/Volume level LEDs** — The four vertical LEDs indicate the level setting of the last adjusted knob of the four front panel volume control knobs for Mic 1, Mic 2, Main 3, and Master. If no knob is adjusted within 5 seconds, all four LEDs turn off. Turning any of the knobs clockwise increases the gain/volume setting, and turning any of the knobs counterclockwise decreases the gain/volume setting. A higher gain/volume level is indicated by more LEDs being lit (from bottom to top).

When the Mic 1, Mic 2, and Main 3 **maximum gain** setting is reached (+12 dB), the top LED flashes three times. When the minimum setting is reached (-79 dB) or if no knob is turned for 5 seconds, the four LEDs are off until the next adjustment. The default input gain setting is 0 dB. See the dB levels and the corresponding LEDs in the illustration.



When the **maximum volume** setting is reached (92), the top LED will flash three times. When the minimum setting is reached (0) or if no knob is turned for 5 seconds, the four LEDs are off until the next adjustment. The default output volume setting is 50. See the level and the corresponding LEDs in the illustration on the right.



- ② **Mic 1 input volume control and on/off status LED** — Turning the knob clockwise increases the gain setting, and turning the knob counterclockwise decreases the volume setting. The on/off LED indicator lights whenever Mic 1 is on or not muted, but the LED goes off after the minimum volume setting has been reached.



---

The gain level is indicated by the Gain/Volume level LEDs (see ①).

- ③ **Mic 2 input volume control and on/off status LED** — Turning the knob clockwise increases the gain setting, and turning the knob counterclockwise decreases the volume setting. The on/off LED indicator lights whenever Mic 2 is on or not muted, but the LED goes off after the minimum volume setting has been reached.

The gain level is indicated by the Gain/Volume level LEDs (see ①).

- ④ **Main 3 line level input volume control and on/off status LED** — Turning the knob clockwise increases the gain setting, and turning the knob counterclockwise decreases the volume setting. The on/off LED indicator lights whenever Main 3 is on or not muted, but the LED goes off after the minimum volume setting has been reached.

The gain level is indicated by the Gain/Volume level LEDs (see ①).

- ⑤ **Master output volume control and on/off status LED** — Turning the knob clockwise increases the volume setting, and turning the knob counterclockwise decreases the volume setting. The on/off LED indicator lights whenever master output is on or not muted, but the LED goes off after the minimum volume setting has been reached.

The output volume level is indicated by the Gain/Volume level LEDs (see ①).

**CAUTION**

*To prevent possible damage to audio equipment, the output volume range may be specified by setting the upper and lower limits via the Windows-based Extron Audio Products Control Program or the SIS commands.*

*See the chapter 3 sections, “Setting output volume range limits” and “Using the command/response table”.*

## **Turning channels on/off**

To turn a channel off, turn the knob counterclockwise until the status LED goes off. To turn a channel on, turn the knob slightly clockwise until the status LED goes on. Whenever an input/output is being adjusted from the front panel, its on/off status LED indicator goes on and all other on/off status LED indicators and the Gain/Volume level LEDs go off for 5 seconds.

## Installation and Operation, cont'd

---

### On/off status LEDs

If no adjustment of the front panel has occurred for 5 seconds, the Gain/Volume level LEDs goes off. All the on/off status LEDs next to each knob are active to indicate the current setting (LED on indicates that the channel is on, LED off indicates that the channel is muted or off).

### Mute/unmute channel

A channel that has been muted by an SIS command can be unmuted by turning the front panel knob clockwise.

For contact closure muted input, no front panel adjustment of that input is allowed. Any attempt to adjust that input causes the input's status LED to blink 3 times.

### Front panel security lockout (executive mode)

Executive mode is a security feature that prevents the front panel knobs from being adjusted.

There are two forms of executive mode and each can only be enabled/disabled via RS-232 commands. See chapter 3, "Remote Control", for command details.

1. **Executive mode 1:** The Mic 1, Mic 2, and Main 3 input gain control knobs on the front panel are locked, although the Gain/Volume level LEDs still show the current gain settings for those inputs if any of those three knobs are rotated slightly. For a muted input, no gain/volume level will be displayed. The individual LED for each input gain control knob flashes three times if that knob is rotated while in Executive mode 1.

**NOTE** *The Master output volume control knob is not locked in Executive mode 1.*

2. **Executive mode 2:** All four front panel volume control knobs are locked, although the Gain/Volume level LEDs still show the current gain/volume settings if any knobs are rotated slightly. For a muted input, no gain/volume level is displayed. The individual LED for each gain/volume control knob flashes three times if that knob is rotated while in Executive mode 2.



## **MVC 121 Mic/Line Mixer**

# 3 **Chapter Three**

## **Remote Control**

RS-232 Programmer's Guide

Windows-based Program Control

Contact Closure Mute

## Remote Control

### RS-232 Programmer's Guide

The MVC 121 can be remotely controlled via a host computer attached to the rear panel's 3-pole captive screw RS-232 connector. The protocol is 9600 baud, 1 stop bit, no parity, and no flow control.

RS-232



The RS-232 control device (host) can use either Extron's Simple Instruction Set (SIS) commands or the graphical control program for Windows. Windows control software is included with the MVC.

The rear panel's RS-232 3-pole female connector has the following pin assignments:

Pin	RS-232 function	Description
1	Tx	Transmit data
2	Rx	Receive data
3	Gnd	Signal ground

### Host-to-MVC communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When a command is valid, the MVC executes the command and sends a response to the host device. All responses from the MVC to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

### MVC-initiated messages

When a local event such as a front panel or contact closure selection or adjustment takes place, the MVC sends a message to the host. No response is required from the host. One MVC-initiated message is listed here (underlined).

(C) Copyright 2004, Extron Electronics, MVC 121, V x.xx ↵

The MVC issues the copyright message when it first powers on. V x.xx is the firmware version number.

Other examples of unsolicited responses are indicated in the SIS command/response table by a ♦ following every description of a response that could also be an unsolicited response.

### Error responses

When the MVC 121 receives a valid SIS command, it executes the command and sends a response to the host device. If the MVC is unable to execute the command because the command

is invalid or it contains invalid parameters, it returns an error response to the host.

The error response codes and their descriptions are as follows:

- E01 – Invalid channel number
- E10 – Invalid command
- E13 – Invalid value (the number is out of range)
- E14 – Invalid command at this time (input on/off command not valid during contact closure mute)
- E23 – Firmware update failure

## Using the command/response table

The command/response table lists valid command ASCII codes, the MVC's responses to the host, and a description of the command's function or the results of executing the command. Lower case characters are acceptable in the command field only where indicated. The ASCII to HEX conversion table below is for use with the command/response table.

ASCII to HEX Conversion Table												Esc 1B	CR 0D	LF 0A							
20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27							
( 28	) 29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F								
0 30	1 31	2 32	3 33	4 34	5 35	6 36	7 37	8 38	9 39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@ 40	A 41	B 42	C 43	D 44	E 45	F 46	G 47	H 48	I 49	J 4A	K 4B	L 4C	M 4D	N 4E	O 4F						
P 50	Q 51	R 52	S 53	T 54	U 55	V 56	W 57	X 58	Y 59	Z 5A	[ 5B	\ 5C	] 5D	^ 5E	_ 5F						
` 60	a 61	b 62	c 63	d 64	e 65	f 66	g 67	h 68	i 69	j 6A	k 6B	l 6C	m 6D	n 6E	o 6F						
p 70	q 71	r 72	s 73	t 74	u 75	v 76	w 77	x 78	y 79	z 7A	{ 7B	7C	}	7D	~ 7E	DEL 7F					

The command/response table uses symbols (defined below) to represent variables.

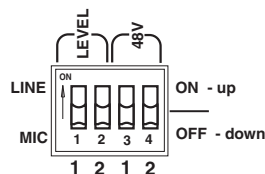
**NOTE** The SIS on/off commands and the equivalent front panel operations have equal priority. The MVC will respond to the latest settings from either SIS commands or front panel operations.

### Symbol definitions

- ↵ = CR/LF (carriage return/line feed) (hex 0D 0A)
- = Space
- ◆ = Every response that could also be an unsolicited response will have this symbol at the end of each description of that response.
- [X1] = Master (output) volume adjustment range (0 – 92), default = 50 (-30 dB), gain (dB) = [X1] - 80

Remote Control, cont'd

- [X2] = Input or output to be adjusted (1 – 4)  
1 = mic 1  
2 = mic 2  
3 = main line level  
4 = master output
- [X3] = On/off status  
0 = off (mute)  
1 = on (unmute)  
2 = mute by contact closure
- [X4] = Input audio gain/attenuation value  
( -79 through +12)
- [X5] = Audio gain (per input)  
(0 – 12)
- [X6] = Audio attenuation (per input)  
(1 through 79)
- [X7] = Controller firmware version (listed to two decimal places,  
i.e., x.xx)
- [X8] = Front panel security lockout (executive modes)  
0 = off  
1 = mode 1 (lock all front panel controls except master  
volume)  
2 = mode 2 (lock all front panel controls)
- [X9] = Rear panel DIP switch settings (0 through 15)  
See the following tables.



		DIP Switch Positions															
<u>X9</u> =		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DIP switch 1	Level Mic 1	Off	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On
DIP switch 2	Level Mic 2	Off	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On	On	On	On
DIP switch 3	48V Mic 1	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On
DIP switch 4	48V Mic 2	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On

		DIP Switch Functions															
[X9] =		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DIP switch 1	Level Mic 1	Mic	Mic	Mic	Mic	Mic	Mic	Mic	Mic	Line	Line	Line	Line	Line	Line	Line	Line
DIP switch 2	Level Mic 2	Mic	Mic	Mic	Mic	Line	Line	Line	Line	Mic	Mic	Mic	Mic	Line	Line	Line	Line
DIP switch 3	48V Mic 1	Off	Off	On	On	Off	Off	On	On	Off	Off	Off	Off	Off	Off	Off	Off
DIP switch 4	48V Mic 2	Off	On	Off	On	Off	Off	Off	Off	Off	On	Off	On	Off	Off	Off	Off

Command	ASCII Command Response (host to controller) (controller to host)	Additional description
<b>Initial power up</b>		
©Copyright 2003, Extron Electronics, MVC 121, V 1.00 ↵		
<b>Turn input on/off (unmute/mute)</b>		
Turn input on/off	$\boxed{X2}*\boxed{X3}!$ $\text{In}\boxed{X2}*\boxed{X3} \downarrow$	Set input $\boxed{X2}$ to $\boxed{X3}$ where $\boxed{X3} = 0/\text{off}, 1/\text{on}, 2/\text{mute}$ by contact closure. An input, while muted by contact closure, is not affected by SIS commands or front panel operations. ♦
View input on/off status	$\boxed{X2}!$ $\boxed{X3} \downarrow$	See <b>Note</b> below. Show the status $\boxed{X3}$ of input $\boxed{X2}$ where the status is 0/off or 1/on or 2/mute by contact closure.
<b>Turn Master Output on/off</b>		
Turn output on/off	$4*\boxed{X3}!$ $\text{Out}4*\boxed{X3} \downarrow$	Set output to $\boxed{X3}$ where $\boxed{X3} = 0/\text{off}$ or 1/on. ♦
View output on/off status	4! $\boxed{X3} \downarrow$	Show the status $\boxed{X3}$ of master output where the status is 0/off or 1/on.
<div> <b>NOTE</b> <p>There are three ways to determine if an input has been muted by contact closure:</p> <ol style="list-style-type: none"> <li>1. The unsolicited response <math>\text{In}\boxed{X2}*\boxed{X3} \downarrow</math> is sent following contact closure mute.</li> <li>2. Querying the status using the <math>\boxed{X2}!</math> command results in the <math>2 \downarrow</math> response.</li> <li>3. Sending the <math>\boxed{X2}*\boxed{X3}!</math> command results in the E14 error message response.</li> </ol> <p>After an input is no longer muted, the input will be restored back to the settings that were in effect prior to the mute, including volume gain control and input on/off status.</p> </div>		

## Remote Control, cont'd

Command	ASCII Command Response (host to controller)	(controller to host)	Additional description
<b>Master Output volume control</b> (see <i>Gain/volume adjustment note</i> on page 3-7)			
Specify a volume setting**	[X1]V/v	Vol[X1]↓	Set the output volume to [X1].
Increment volume**	+V/v	Vol[X1]↓	Increment the volume in 1 dB steps. ◆
Decrement volume**	-V/v	Vol[X1]↓	Decrement the volume in 1 dB steps. ◆
View output volume level**	V/v	[X1]↓	Show the output volume.
<b>Front panel security lockout (executive mode)</b>			
Set executive mode**	[X8]X/x↓	Exe[X8]↓	Set executive mode to [X8] where 0 = off, 1 = mode 1, and 2 = mode 2. See <i>Front panel security lockout (executive mode)</i> in chapter 2.
View executive mode status**	X/x↓	[X8]↓	Show executive mode status.
<b>Information request</b>			
Request general info**	I/i	[X9]↓	Show rear panel DIP switch settings, where [X9] = 16 possible DIP switch setting (0 – 15). See the DIP switch settings tables under <i>Symbol definitions</i> in this chapter.
<b>Request for part number</b>			
Request for part number**	N/n	60-572-01↓	Show the MVC 121 part number.
<b>Input gain control</b> (see <i>Gain/volume adjustment note</i> on page 3-7)			
Set gain (+dB)	[X2]*[X5] G	In[X2]•Gain[X4]↓	Set the gain of input [X2] to [X4].
Set attenuation (-dB)	[X2]*[X6] g	In[X2]•Gain[X4]↓	Set the attenuation of input [X2] to [X4].
Increment gain**	[X2]+G/g	In[X2]•Gain[X4]↓	Increment the gain of input [X2] in 1 dB steps. ◆
Decrement gain**	[X2]-G/g	In[X2]•Gain[X4]↓	Decrement the gain of input [X2] in 1 dB steps. ◆
View input gain level**	[X2]G/g	[X4]↓	Show the gain [X4] of input [X2].

\*\* These commands use both uppercase and lowercase characters, e.g., X or x (X/x), I or i (I/i), etc.



Command	ASCII Command Response (host to controller)	Response (controller to host)	Additional description
<b>Update firmware</b>			
Upload firmware	[Esc]Upload ↵	Go ↵	See Note below.
Upload success		UPL ↵	See Note below.
<b>NOTE</b> Firmware updates will periodically become available on the Extron Web site. To update the firmware, first download the update file from the site. Then open HyperTerminal and type the [Esc]Upload↵ command. After receiving the Go↵ response, select Send Text File from the Transfer menu. In the Send Text File window, locate and select the file you downloaded and click Open. The controller will send the UPL↵ response once the update has been successfully completed. It will send the error code E23 if the update failed.			
<b>Query software version</b>			
Query software version**	Q/q	[X7] ↵	Show the MVC's firmware version.
<b>System reset</b>			
Reset to factory default	[Esc]ZXXX↵	Zpx ↵	Note: factory default should be as follows: Master output volume: [X1] = 50 (-30 dB). All input volume: [X9] = 0 dB.

### Gain/volume adjustment note:

All front panel gain/volume adjustments are in 0.5 dB increments whenever the knobs are turned slowly. However, the SIS messages (RS-232) that the MVC sends to the host are in 1 dB increments **only**. The MVC treats each 0.5 dB gain/volume increment between two consecutive whole dB units as the lower of the two units. As shown in the table examples, in a continuous adjustment sequence, the SIS messages to the host will send the same value twice.

Volume Change	SIS Message to Host
...	...
51.0	Vol 51
51.5	Vol 51
52.0	Vol 52
52.5	Vol 52
53.0	Vol 53
...	...

Remote Control, cont'd

Command	ASCII Command (host to controller)	Response (controller to host)	Additional description
<b>Set volume range limit</b>			
Set volume range lower limit	4* [X] *21#	Vl14 * [X] ↵	Set the volume range lower limit to [X].
Set volume range upper limit	4* [X] *22#	Vu14 * [X] ↵	Set the volume range upper limit to [X].
<b>View volume range limit</b>			
View volume range lower limit	4*21#	[X] ↵	Show the volume range lower limit [X].
View volume range upper limit	4*22#	[X] ↵	Show the volume range upper limit [X].

---

## Windows-based Program Control

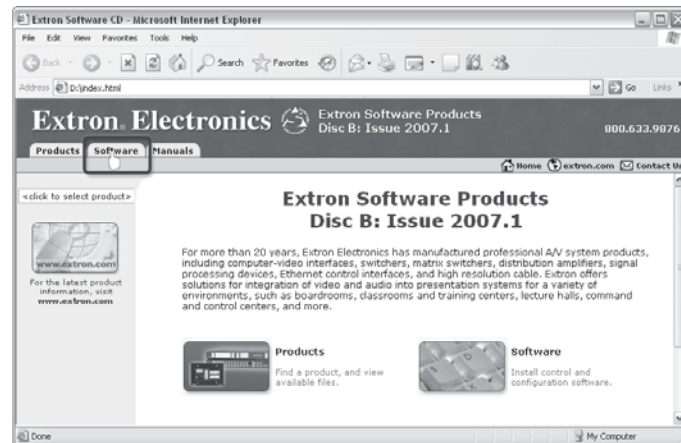
The Extron Audio Products Control Program is compatible with Windows 2000 and Windows XP, and provides remote control of the input gain/attenuation, output volume output adjustment, and other features.

Updates to this program can be downloaded from the Extron Web site (<http://www.extron.com>).

### Installing the software

The program is contained on the EXtron Software Products CD-ROM, disk B. Install the software as follows:

1. Insert the CD-ROM into the drive
2. Click the Software tab.



3. Scroll to the desired program and click Install.



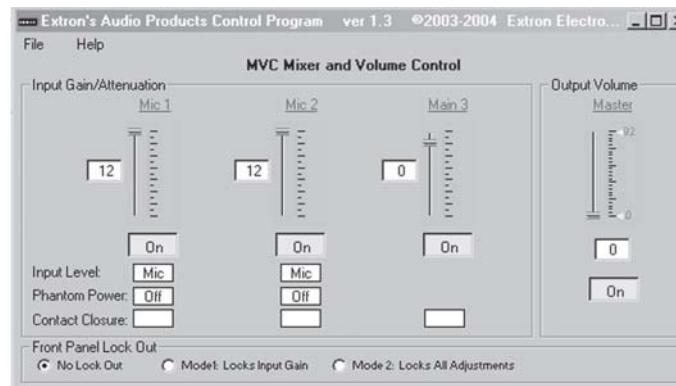
4. Follow the on-screen instructions. By default, the Windows installation creates a C:\Program Files\Extron\AudProds folder and saves the program there.

## Remote Control, cont'd

### Using the software

To run the software:

1. Double click the Audio Products Control Program icon in the Extron Electronics program group.
2. Click the comm port that is connected to the unit's remote connector.
3. Click OK. The Audio Products Control Program main window displays the input gain/attenuation settings for each channel and allows the user to adjust them. The user can also adjust the volume setting for the output channel. See "Setting output volume range limits" in this chapter.

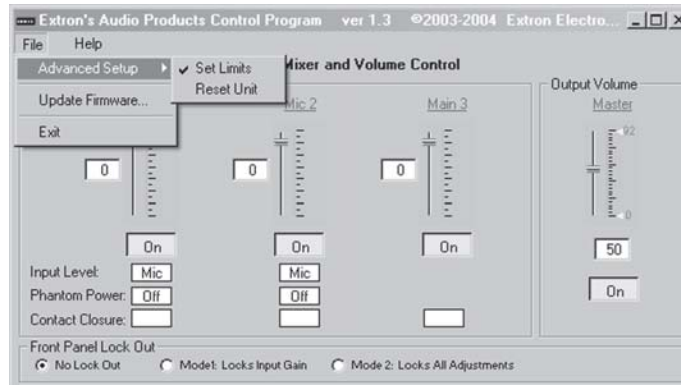


The window contains channel mute, front panel lock out (executive modes), and unit reset controls.

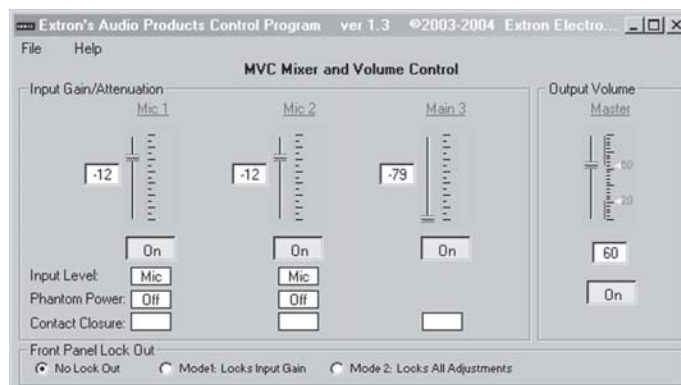
**NOTE** *The front panel lockout feature prevents unauthorized adjustments to the MVC's front panel. See Front panel security lockout (executive mode) in chapter 2.*

### Setting output volume range limits

The Master output volume control can be configured with upper and lower range limits to restrict the volume output. Setting range limits may prevent possible damage to audio equipment. From the File drop-down menu, select Advanced Setup, then select Set Limits.



From the Master output volume range indicator, set the upper and lower range limits by moving the arrowhead indicators. After setting the limits, the output volume can only be set within the specified range limits, as shown below.



## Remote Control, cont'd

---

### Using the help system

For information about program features, you can access the help program in any of the following ways:

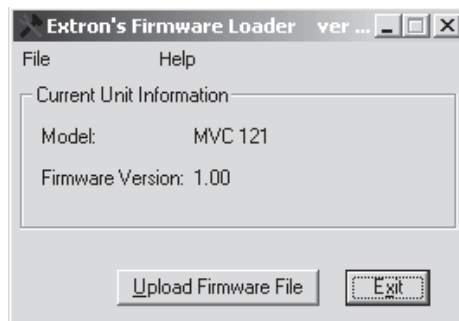
- From the Extron Electronics program group, double-click the Audio Products Help icon.
- From within the Audio Products Control program, click Help on the task bar.
- From within the Audio Products Control program, press the F1 key.



### Updating the firmware

Firmware updates will be available on the Extron Web site. To load a firmware update:

1. Download the update file from the Extron Web site ([www.extron.com](http://www.extron.com)).
2. Run the Audio Products Control Program.
3. On the File menu, click Update Firmware. The Firmware Loader window appears.



#### **Firmware Loader window**

4. Click the Upload Firmware File button.
5. Locate and select the update file you downloaded from the Web site and click Open. The Firmware Loader loads the update.


**NOTE** *The firmware update file must have an .s19 extension. If it does not have that extension it will not work properly.*

6. When the program is finished loading the update, click Exit.

---

## Contact Closure Mute

For contact closure mute, connect a contact closure remote control device to the rear panel's female 6-pole captive screw connector. The pin assignments for the MVC's contact closure mute connector are shown in the following table.

Pin	Contact closure	Description
1	Connect pin 1 to Gnd	Mute input Mic 1
2	Connect pin 2 to Gnd	Mute input Mic 2
3	Connect pin 3 to Gnd	Mute input Main 3
	Gnd	Signal ground

### NOTE

*Contact closure mute has higher priority over both SIS commands and front panel operations and is not affected by either SIS commands or front panel operations.*

*After contact closure mute has been removed, the input settings will return to the original settings that were in effect prior to the mute, including input on/off status and gain setting.*

## **Remote Control, cont'd**

---





## **MVC 121 Mic/Line Mixer**

# A

## **Appendix**

### **Specifications, Part Numbers, and Accessories**

Specifications

Included Parts

Optional Accessories

## Specifications, Parts, and Accessories

---

### Specifications

#### Audio

Gain from mic input to both fixed and variable outputs at default settings	
Mic DIP switch = line level .....	Unbalanced output: +20 dB; balanced output: +26 dB
Mic DIP switch = mic level .....	Unbalanced output: +50 dB; balanced output: +56 dB
Gain from main input to both fixed and variable outputs at default settings	
	Unbalanced output: 0 dB; balanced output: +6 dB
Master volume range .....	0 to 92 ("off", and -79 dB to +12 dB in 0.5 dB steps)
Mic 1, 2, and Main 3 gain range .	-79 dB to +12 dB in 0.5 dB steps
Frequency response .....	20 Hz to 20 kHz, $\pm 0.05$ dB
THD + Noise .....	0.03% @ 1 kHz at nominal level
S/N .....	>90 dB, balanced, at maximum output
Crosstalk .....	<-80 dB @ 1 kHz, <-60 dB @ 20 kHz, fully loaded
Stereo channel separation .....	>80 dB @ 1 kHz, >60 dB @ 20 kHz
CMRR .....	>75 dB @ 20 Hz to 20 kHz

**NOTE** *All input gain default settings are at 80. The master volume default setting is 50 (-30 dB).*

#### Audio input

Number/signal type	
Microphone inputs .....	2 mono, balanced/unbalanced
Main input .....	1 stereo, balanced/unbalanced
Connectors	
Microphone inputs .....	(1) 3.5 mm captive screw connector, 5 pole
Main input .....	(1) 3.5 mm captive screw connector, 5 pole
Impedance .....	>10k ohms, DC coupled
Nominal level (mic inputs)	
DIP switch = line level .....	-30 dBV (32 mV) for a wireless microphone
DIP switch = mic level .....	-60 dBV (1 mV) for a wired microphone
Nominal level (main input) .....	-10 dBV (316 mV)
Maximum level .....	+20 dB above nominal level, (balanced or unbalanced) at 1% THD+N
Input gain adjustment .....	-79 dB to +12 dB, adjustable per input

---

Input level sensitivity (mic inputs)  
 DIP switch = line level ..... -42 dBV (8 mV) for nominal output  
 DIP switch = mic level ..... -72 dBV (0.25 mV) for nominal output  
 Input level sensitivity (main input)  
 -22 dBV (79 mV) for nominal output

**NOTE**      $0\text{ dBu} = 0.775\text{ V}_{rms}$ ,  $0\text{ dBV} = 1\text{ V}_{rms}$ ,  $0\text{ dBV} = 2\text{ dBu}$

## Audio output

Number/signal type ..... 2 stereo, balanced/unbalanced  
 Connectors ..... (2) 3.5 mm captive screw connector, 5 pole  
 Impedance ..... 50 ohms unbalanced, 100 ohms balanced  
 Gain error .....  $\pm 0.1$  dB channel to channel  
 Nominal level ..... +4 dBu (1.23 V), balanced output (when gain is set to +6 dB)  
 -10 dBV (0.316 V), unbalanced output  
 Maximum level (Hi-Z) .....  $> +24$  dBu, balanced;  $> +18$  dBu, unbalanced at 1% THD+N  
 Maximum level (600 ohm) .....  $> +15$  dBm, balanced at 1% THD+N

## Control/remote— mixer/volume controller

Serial control port ..... RS-232, 3.5 mm female captive screw connector (3 poles of a 6 pole connector)  
 Baud rate and protocol ..... 9600, 8-bit, 1 stop bit, no parity  
 Serial control pin configurations 1 = TX, 2 = RX, 3 = GND  
 Contact closure mute control .... 1 = mic 1, 2 = mic 2, 3 = main input  
 Program control ..... Extron's control program for Windows®  
 Extron's Simple Instruction Set (SIS™)

## General

External power supply ..... 100 VAC to 240 VAC, 50/60 Hz, external; to 12 VDC, 1 A, regulated  
 Power input requirements ..... 12 VDC, 0.5 A.  
 Temperature/humidity ..... Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, noncondensing  
 Operating +32° to +122°F (0° to +50°C) / 10% to 90%, noncondensing  
 Cooling ..... Convection, no vents  
 Mounting

## Specifications, Parts, and Accessories, cont'd

---

Rack mount .....	Yes, with optional 1U, 9.5" deep rack shelf (RSU 129, #60-190-01; RSB 129, 60-604-01); 1U, 6" deep rack shelf (RSU 126, #60-190-10; RSB 126, 60-604-10); or VersaTools® 1U, 3.5" deep rack shelf (RSF 123, #60-190-20; RSB 123, 60-604-20)
Furniture mount .....	Yes, with optional VersaTools mini under-desk mounting kit, part #70-212-01 (MBU 123)
Pole mount .....	Yes, with VersaTools mini pole mount kit, part #70-217-01 (PMK 100)
Enclosure type .....	Metal
Enclosure dimensions .....	1.7" H x 4.3" W x 3.0" D (1U high, quarter rack wide) (4.3 cm H x 10.9 cm W x 7.6 cm D) (Depth excludes connectors and knobs.)
Product weight .....	0.6 lbs (0.3 kg)
Shipping weight .....	3 lbs (2 kg)
Vibration .....	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety .....	CE, CUL, UL
EMI/EMC .....	CE, C-tick, FCC Class A, ICES, VCCI
MTBF .....	30,000 hours
Warranty .....	3 years parts and labor

**NOTE**     *All nominal levels are at  $\pm 10\%$ .*

**NOTE**     *Specifications are subject to change without notice.*

---

## Included Parts

These items are included in each order for an MVC 121:

Included parts	Replacement part number
MVC 121	60-572-01
3.5 mm, 5-pole captive screw connectors (4)	10-319-10
3.5 mm, 2-pole captive screw connector	10-319-15
3.5 mm, 6-pole captive screw connector	10-319-14
MVC 121 User's Guide	
12 VDC, 1 A external power supply	70-055-01
Rubber feet	
Windows-based control software	

## Optional Accessories

Accessory	Part number
RSF 123 VersaTools® rack shelf kit	60-190-20
RSB 123 VersaTools rack shelf	60-604-20
RSU 129 1U universal rack shelf	60-190-01
RSB 129 1U basic rack shelf	60-604-01
RSU 126 6" deep universal rack shelf kit	60-190-10
RSB 126 6" deep basic rack shelf	60-604-10
MBU 123 under-desk mount kit	70-212-01
PMK 100 mini projector mount kit	70-217-01



## Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,  
and Central America:**

Extron USA  
1001 East Ball Road  
Anaheim, CA 92805  
U.S.A.

**Japan:**

Extron Japan  
Kyodo Building, 16 Ichibancho  
Chiyoda-ku, Tokyo 102-0082  
Japan

**Europe, Africa, and the Middle East:**

Extron Europe  
Hanzeboulevard 10  
3825 PH Amersfoort  
The Netherlands

**China:**

Extron China  
686 Ronghua Road  
Songjiang District  
Shanghai 201611  
China

**Asia:**

Extron Asia  
135 Joo Seng Road #04-01  
PM Industrial Bldg.  
Singapore 368363  
Singapore

**Middle East:**

Extron Middle East  
Dubai Airport Free Zone  
F12, PO Box 293666  
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

*If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.*

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron <b>USA - West</b> Headquarters <b>+800.633.9876</b> Inside USA / Canada Only <b>+1.714.491.1500</b> <b>+1.714.491.1517</b> FAX	Extron <b>USA - East</b> <b>+800.633.9876</b> Inside USA / Canada Only <b>+1.919.863.1794</b> <b>+1.919.863.1797</b> FAX	Extron <b>Europe</b> <b>+800.3987.6673</b> Inside Europe Only <b>+31.33.453.4040</b> <b>+31.33.453.4050</b> FAX	Extron <b>Asia</b> <b>+800.7339.8766</b> Inside Asia Only <b>+65.6383.4400</b> <b>+65.6383.4664</b> FAX	Extron <b>Japan</b> <b>+81.3.3511.7655</b> <b>+81.3.3511.7656</b> FAX	Extron <b>China</b> <b>+400.883.1568</b> Inside China Only <b>+86.21.3760.1568</b> <b>+86.21.3760.1566</b> FAX	Extron <b>Dubai</b> <b>+971.4.2991800</b> <b>+971.4.2991880</b> FAX
--	--	---	---	---	--	---